



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/225,153      | 01/04/99    | CHEAH                | C IR-1529(2-19)     |

002352 MM42/0917  
OSTROLENK FABER GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK NY 10036-8403

| EXAMINER |              |
|----------|--------------|
| CLARK, S |              |
| ART UNIT | PAPER NUMBER |

2815

DATE MAILED: 09/17/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/225,153

Applicant(s)  
Cheah et al

Examiner  
S.V.Clark

Group Art Unit  
2815



☒ Responsive to communication(s) filed on Apr 26, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-29 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☒ Claim(s) 27-29 is/are allowed.

☒ Claim(s) 1, 3-7, and 10-13 is/are rejected.

☒ Claim(s) 2, 8, 9, and 14-26 is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Apr 22, 1999 is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been  
☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2815

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalfus et al.

Kalfus teaches substantially all of the structural features recited in the claims wherein Kalfus an integrated circuit device having bottom lead frame 12 having plate attached to a bottom electrode of die 16 (see col. 4 lines 42-43). The top of said device has a metallized region coupled to a copper (col. 4, line 14) plate 40.

As Kalfus in figure 3 shows a surface lead connection to said chip it would have been considered obvious to one having ordinary skill in this art that all surface connections would be contacted and include associated connections to the applicable devices regions (i.e. source, drain, gate) such as a power MOSFETs because Kalfus in col. 1, lines 11-15 discloses that device of his invention is applicable to all kinds of integrated circuit devices and thereby the applicable connections for the contact structure for each device would apply.

Curable conductive medium 38 is shown and the copper plate is shown with a downward directed projection in figure 4 and 5 (col. 5, line 32-33 "convexly shaped").

Art Unit: 2815

Col. 6, line 29-30 teach the convention of covering die regions with passivation dielectrics and said conventional passivation materials would obviously include nitrides used traditionally in this art.

A beam portion 30 is shown extending from a lateral edge of the copper plate and a layer of curable conductive material 36 is shown disposed between the distal end of the beam.

Claims 1, 3-7, 10-13 are rejected.

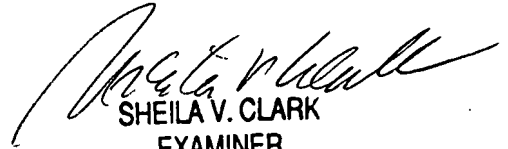
Claims 2, 8, 9, 14-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 27-29 are considered allowable over the prior art of record.

Kudo, Kock and Nishi et al are cited to show chip contacted by top and bottom electrical plates.

Any inquiry concerning this communication should be directed to Examiner S. Clark at telephone number (703) 308-4924.

September 10, 1999

  
SHEILA V. CLARK  
EXAMINER  
GROUP 2500